

I. Project Title: **Interagency Standardized Monitoring - Utah**

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III. Project Summary:

This project monitors populations of endangered fishes in Utah. The following objectives have been outlined for monitoring post-larval Colorado pikeminnow:

1. Develop annual indices of the relative abundance of YOY Colorado pikeminnow.
2. Determine trend(s) in these indices.
3. Determine relationships between these indices and stream flow, water temperature, abundance of sympatric fishes, and physical characteristics of backwaters

Middle Green River

ISMP activities for the 2001 field season included fall seining for young-of-the-year (YOY) Colorado pikeminnow. The late-juvenile /adult Colorado pikeminnow monitoring portion of ISMP ended with sampling in 2000. Efforts are now being directed toward developing abundance estimates as a means of monitoring populations and tracking progress toward recovery.

Fall seining for young-of-year produced 11 pikeminnow in 2001. They ranged in size from 36–67 mm and were captured in seven different backwaters. All but one of the fish were captured in the upper half of the reach. This is the lowest catch of young-of-year pikeminnow ever recorded for ISMP in the middle Green River.

Lower Green River/ Colorado River

As in the middle Green River, the late-juvenile /adult Colorado pikeminnow monitoring portion of ISMP ended with sampling in 2000 on the lower Green and Colorado Rivers. Efforts are now being directed toward developing abundance estimates as a means of monitoring populations and tracking progress toward recovery.

Seining conducted produced a total of 29 YOY Colorado pikeminnow between the Colorado and lower Green river reaches. These catch rates are consistent with the middle Green River observations, being the lowest rates recorded for young-of-year (YOY) Colorado pikeminnow during the ISMP sampling. In both reaches, YOY Colorado pikeminnow were distributed throughout. Nonnative cyprinids continued to dominate the catch in both reaches.

IV. Study Schedule:

- a. Initial year: 1986
- b. Final year: Ongoing

V. Relationship to RIPRAP:

General Recovery Program Support Action Plan
V.A.1. Conduct standardized monitoring program.

VI. Accomplishments of FY 01 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Collection and database entry of YOY sampling as described in the ISMP handbook.

Task 1 - Baseline ISMP efforts (current sampling protocols).

Middle Green River

2001 annual fall sampling for YOY Colorado Pikeminnow was conducted from September 17–20. Backwaters meeting sampling protocol were found in all subreaches for a total of 42 backwaters sampled. The weather was warm and dry with mostly sunny conditions throughout the sampling period. Main channel temperatures ranged from 17°C to 21.7°C. Backwater temperatures ranged from 17.3°C to 24.2°C. Twelve different species were collected from backwaters in this reach of the middle Green River.

Eleven YOY Colorado pikeminnow were captured in seven backwaters. This is the lowest catch rate of YOY Colorado pikeminnow since ISMP began in 1986 (Figure 1). The first pikeminnow was captured at river mile 318 near the confluence of Cub Creek and the mouth of Split Mountain Canyon, and the last was captured at river mile 238.5 below the confluence of the White River. This was the only pikeminnow captured in the lower half of this reach. The next lowest were three fish captured at river mile 274.9. This is a different distribution than that of the past four years where fish have been found further downstream (Figure 2). Young-of-year pikeminnow ranged in size from 36–67 mm with a mean length of 46.9 mm (Figure 1).

A total of 67 young-of-year chubs (*Gila* spp.) were captured in thirty backwaters. This was an increase from the previous year's catch of only three.

There were a total of 47 young-of-year suckers caught. One of these was unidentified and the rest were flannelmouth suckers. There were no bluehead suckers observed in seine samples in 2001.

Total catch numbers were dominated by red shiners, fathead minnows, and sand shiners. There were six other species also captured. These included 21 black crappie, 11 channel catfish, 2 black bullhead catfish, 1 common carp, 1 speckled dace, and 1 smallmouth bass.

In addition to the 84 protocol seine hauls, there were also 15 additional, or “recreational”, seine hauls pulled in areas that didn't necessarily fall within sampling protocol. A total of 26 YOY pikeminnow were captured in six of the “recreational” hauls. Most extra hauls were pulled in the shallow back end of backwaters.

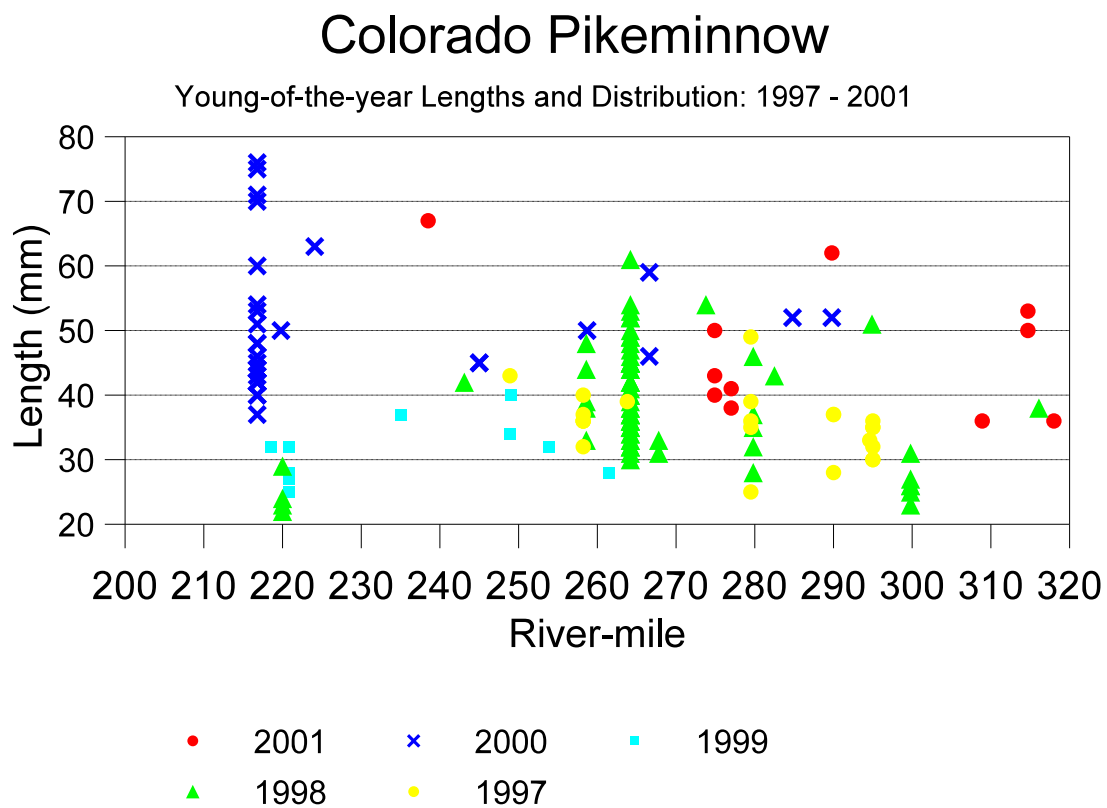


Figure 1. Number and mean length of YOY Colorado pikeminnow collected during fall ISMP seining in the middle Green River: 1992-2001.

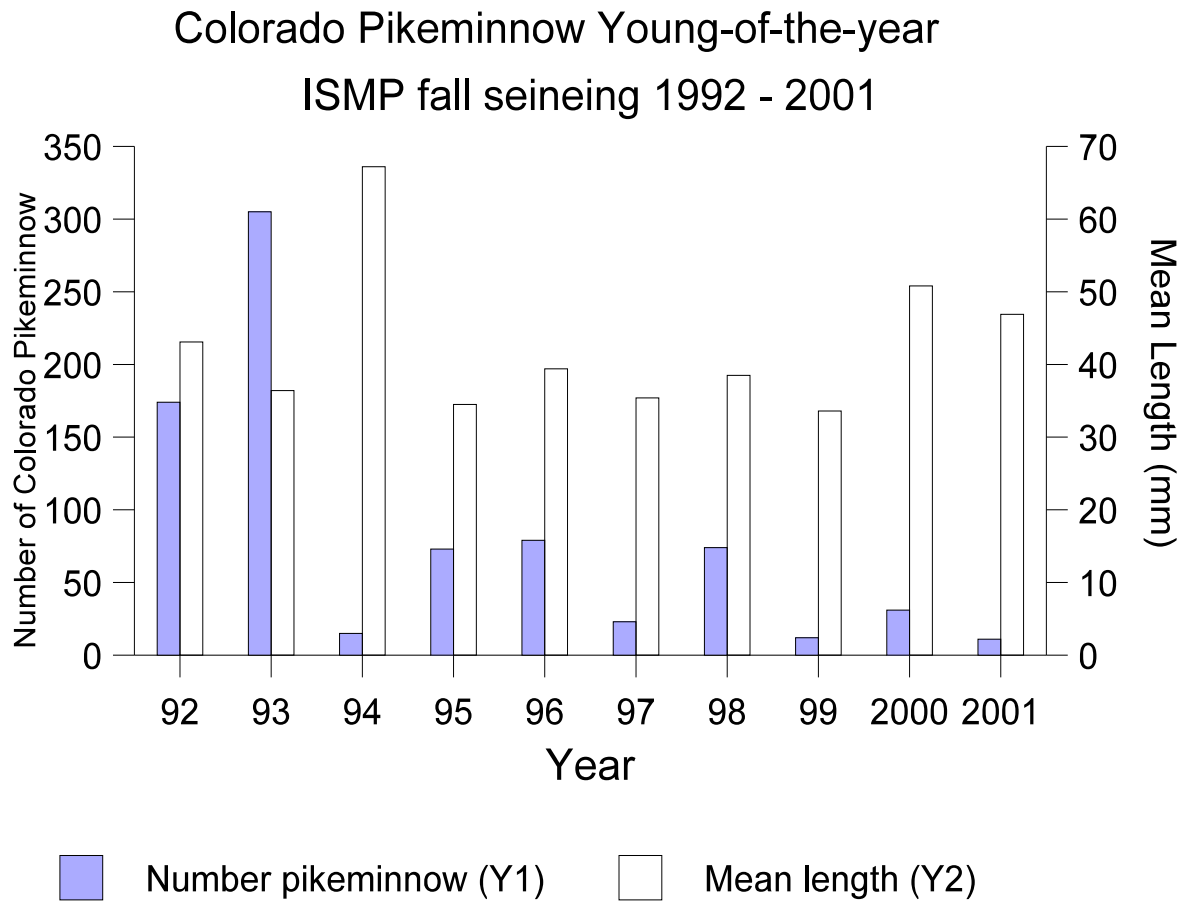


Figure 2. Length and distribution by year of YOY Colorado pikeminnow caught during fall seining activities: 1997 - 2001.

Lower Green River/ Colorado River

The 2001 annual Interagency Standardized Monitoring Program (ISMP) for sampling young-of-year (YOY) Colorado pikeminnow in the fall was conducted the week of September 2–7, 2001 on the lower Green River and the Colorado River. Two teams of researchers sampled the Colorado River RM 110–0 (reach 1) and the Green River RM 120–0 (reach 3), meeting at the confluence of the two rivers. Backwaters meeting sampling protocol were not found in all subreaches. Thirty-five backwaters each were sampled on the Colorado and Green rivers totaling 70 for both reaches combined. On the Colorado River, main channel temperatures ranged from 20°C to 26°C, while backwater temperatures were 15°C to 29°C. On the Green River, main channel temperatures ranged from 19°C to 28°C, while backwaters were 20°C to 33°C. In 2001, there were very few actual backwaters available to be sampled. Many at first glance appeared to fall within ISMP parameters for size and depth. However, upon closer examination, many of these backwaters were filled with silt, within an inch or so of the water surface.

In the Colorado River, 15 Colorado pikeminnow were captured, measured and released. The average total length (TL) of these fish was 42.3 mm and ranged from 23–65 mm. Fourteen Colorado pikeminnow were captured, measured and released in the Green River.

Average TL of these fish was 43.2 mm and ranged from 30–68 mm (Figure 3). Catch rates for YOY Colorado pikeminnow are the lowest seen since 1993 in both the Colorado and lower Green rivers (Table 1) and since ISMP monitoring began in 1986. All YOY pikeminnow collected on the Colorado River were found below RM 55. YOY pikeminnow were distributed throughout the lower Green River (Figure 4).

As in the middle Green River, the majority of fish captured in the lower Green and Colorado rivers were nonnative fish. These included red shiner, sand shiner, fathead minnow, channel catfish, common carp, and western mosquitofish. Occurrence of bluehead and flannelmouth suckers was low for both rivers. One *Gila* spp. was captured in the Colorado River.

Some samples were preserved in the field and may contain unidentified Colorado pikeminnow (20 samples from the lower Green River and 11 from the Colorado River). These collections were transferred to the Larval Fish Laboratory in December for identification.

Table 1. Total numbers, lengths and mean catch-per-unit-effort (CPUE; fish/100m²), by year, for Colorado pikeminnow caught during young-of-year monitoring on the Colorado and lower Green rivers, 1993-2001.

Year	Colorado Pikeminnow Caught	Mean Length (mm)*	Length Range (mm)*	Total Area Sampled (m ²)	CPUE (Fish/100m ²)
1993					
Total	1355	36.83	14-74	7479	18.11
Reach 3	1211	37.36	14-74	4574	26.47
Reach 1	142	32.28	22-47	2905	4.88
1994					
Total	453	54.26	23-99	7030	6.44
Reach 3	315	49.98	23-99	3844	8.19
Reach 1	138	64.07	32-96	3186	4.33
1995					
Total	141	22.11	11-45	5612	2.51
Reach 3	57	24.94	13-45	2722	2.09
Reach 1	84	20.46	11-35	2890	2.90
1996					
Total	1276	42.7	19-75	7269	17.55
Reach 3	410	41.4	19-75	2981	13.75
Reach 1	866	39.6	20-81	4160	20.81
1997					
Total	52	29.8	13-40	5581	0.93
Reach 3	40	33.1	19-40	2821	1.41
Reach 1	12	18.3	13-34	2760	0.43
1998					
Total	340	32.4	18-68	7945	4.28
Reach 3	250	32.1	18-68	3235	7.79
Reach 1	88	34.5	20-60	4710	1.87
1999					
Total	312	26.7	15-43	8892	3.51
Reach 3	304	26.8	15-38	4102	7.41
Reach 1	8	25.0	19-43	4790	0.17
2000					
Total	789	39.7	21-88	10421	7.57
Reach 3	619	37.9	21-88	3704	16.71
Reach 1	170	45.7	25-82	6717	2.53
2001					
Total	29	42.7	23-68	9842	0.29
Reach 3	14	43.2	30-68	6015	0.23
Reach 1	15	42.3	23-65	3832	0.39

Reach 3: Green River, RM 120 to RM 0 (Confluence with the Colorado River)

Reach 1: Colorado River, RM 110 to RM 0 (Confluence with the Green River)

*Does not include fish over 100 mm. (Or 1@92 mm in 1999)

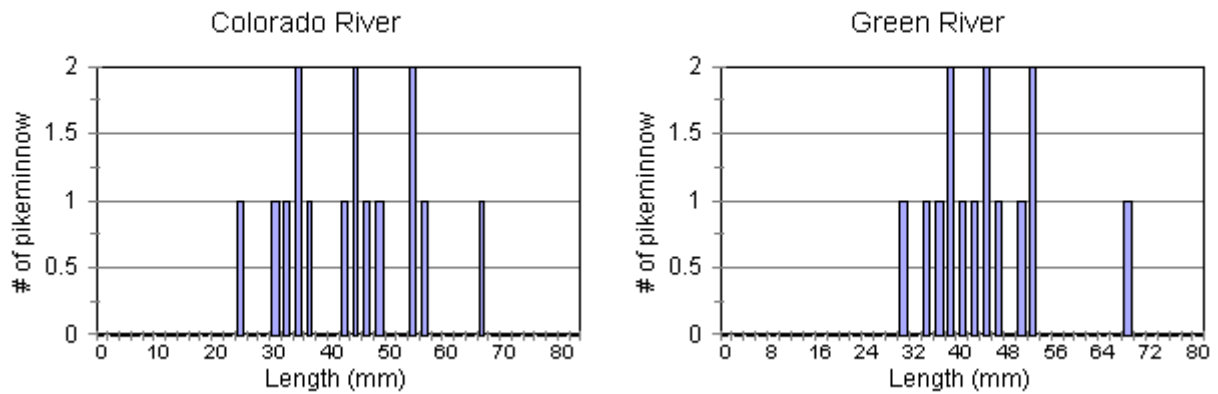
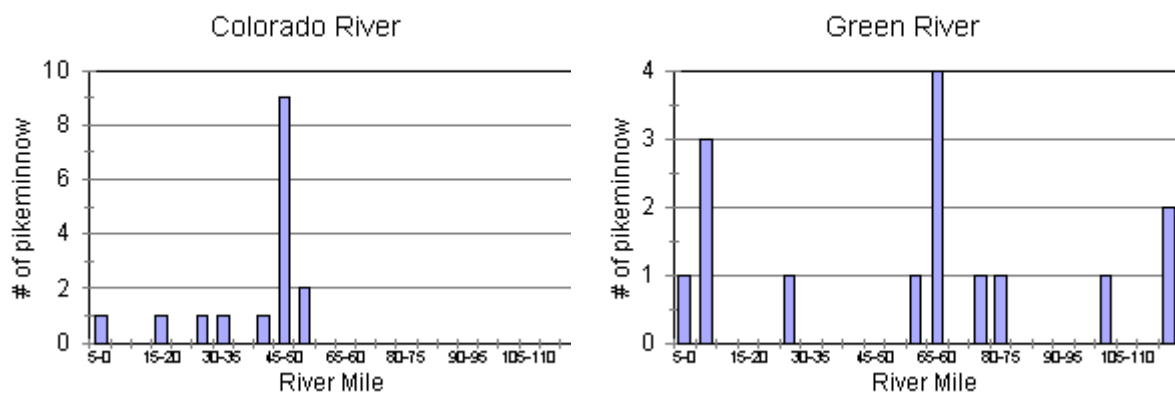


Figure 3. Length frequency distribution of YOY Colorado pikeminnow in the Colorado and lower Green and rivers during ISMP, 2001.



VII. Recommendations:

- I. Results of fall seining illustrate a dramatic decrease in the catch rates of YOY Colorado pikeminnow.

Results of fall seining this year, as in previous years, indicated a clustered distribution of YOY pikeminnow in many reaches. In many cases, better than half of the YOY pikeminnow collected for the year were found in one or two backwaters. This makes observation or detection of trends and year class strength questionable. An increase in effort by sampling more habitats would help reduce this affect.

Currently, the back and mouth of backwaters along with backwaters of maximum depth of less than .3 meters are not sampled. In many instances, it has been observed that these habitats contain many pikeminnow. Including these areas and shallow habitats would increase the detection of pikeminnow.

With the adult portion of ISMP being eliminated, there is a need for improved monitoring of YOY Colorado pikeminnow. An increase in effort involving a more thorough sampling of available backwaters will improve the validity of the data collected.

VIII. Project Status:

Young-of-the-year portion potentially ongoing with changes.

IX. FY 01 Budget:

A. Funds budgeted:	\$ 40,000
B. Funds expended/obligated:	\$ 40,000
C. Difference:	\$ 0
D. Percent FY2001 work completed: 100%	
E. Recovery Program funds spent for publication charges:	\$ 0

X. Status of data submission:

Middle Green River: Data will be submitted to database manager by December 15, 2001.

Lower Green River/

Colorado River: Data will be submitted to USFWS by January 15, 2001.

XI. Signed: Ron Brunson

November 26, 2001